ANOTHER RECRUIT

The Dart Kitten in the Air : A Sturdy Low-wing Single-seater with Good Flying Qualities

It seems that there will always be a firm, if comparatively small, market for single-seaters which are inexpensive to run and to maintain. At the moment only one of the many available examples has been flown and developed for a sufficient length of time to satisfy the doubts in the minds of prospective owners—and this type, though filling only one section of the market, is now being sold in small but satisfactory numbers. The other half of the prospective market remains to be fully explored, and three or four more sporting types are either available, or will shortly be so. When one or more of these has shown its ability to stand up to continuous hard flying then its manufacturers can expect a small-scale demand.

The successful candidate will need to be amply strong, easy to fly, cheap to maintain, reliable, and fast enough to be used for serious cross-country work in reasonable weather conditions. The new Dart Kitten appears to comply with all but one of these conditions, and that remaining one could be filled by installing a more powerful engine.

At present the Kitten is fitted with a 27 h.p. Ava flat-four two-stroke, giving the machine an official cruising speed of 65 m.p.h. and and official climb of 400 ft./min. While I was flying the machine the speed at 2,300 r.p.m. did not appear to be very much higher than 60 m.p.h., and the full-throttle climb at the recommended speed was certainly not as good as 400 ft./min., so it can be supposed either that the Ava was not giving of its best, or that I was not getting the best out of the Ava. Another 10 h.p. would make all the difference to a machine which is certainly a very pleasant one.

As far as flying qualities are concerned the Kitten may, perhaps, be compared with one of the earlier Klemms, though the aileron control is much lighter and more pungent. The controls are, in fact, extremely nice, even though, in common with those of other ultra-lights, they are not particularly well harmonised. Probably it would be worse if they were, since the methods used for flying a machine with a wing-loading as low as 5.3 lb./sq. ft. are not at all normal.

When I tried the machine no spinning tests had been made, so my stalling experiments were carried out somewhat gingerly. At something a good deal less than an indicated 40 m.p.h. the Kitten started to sink on an even keel with ample control in all axes. A better test of its safe stall was given, quite unconsciously, by another pilot who had had little previous experience of such machines. He took it off successfully with the tail skid almost on the grass and with the machine thoroughly and adequately stalled; he brought it in much too slowly and held off too high, yet the machine just sank firmly on to the earth without dropping a wing. The aerofoil section, incidentally, changes from the root to the tapered tip, with a distinct "gull" effect, and this probably accounts for its good natural stability at the stall.

Roominess

Structurally, the machine is otherwise quite straightforward and does not give one the impression of being of small size; there is, in fact, lots of elbow room in the cockpit—a feature which cannot be overstressed. The undercarriage is of simple cantilever design, sprung by means of rubber discs.

Once a pilot has accustomed himself to the carburation, the Ava engine is very pleasant and exceptionally smooth-running in the air. On the ground there is an idling vibration inseparable from such a design and the movement of the protruding cylinders is startling to behold. However, it is better that the engine should leap about on its Silentbloc mountings than that it should try to break the machine. From the ground observer's point of view, it is, however, too noisy.

With the tail held a little below horizontal the Kitten flies itself off after one or two minor bounces, and, at the end of a trip, will land itself with almost equal facility, though the newcomer must be careful not to over-do the checking process. Naturally enough with such a relatively clean machine, the hold-off is somewhat prolonged, but all is well so long as the aforementioned newcomer does not treat his elevator violently. I found that, after an initial levelling-off, the stick could be held almost stationary until the final stall.

Given a rather more powerful engine the Dart Kitten will be a worthy candidate for the single-seater market. H. A. T.

THE DART KITTEN

27 h.p. Ava flat-four engine

Span	31 ft. 9 in.
Length	21 ft. 4 in.
Height	7 ft. 11 in.
Weight empty	440 lb.
Disposable load	242 lb.
Wing loading	5.3 lb./sq. ft.
Power loading	25.4 lb./h.p.
Maximum speed	75–80 m.p.h.
Cruising speed	65 m.p.h.
Stalling speed	37 m.p.h.
Endurance at cruising speed	4 hours.
Price	£345

Makers: Dart Aircraft, Ltd., 29, High Street North, Dunstable, Beds.

This *Flight* photograph of the Kitten gives a good idea of its comparatively large size. In the flying picture above, the "gull" effect may just be discerned.